

Current Issues in License Renewal

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Agenda

- Program Status
- Public Interest
- License Renewal “Hot Topics”
- Operating Experience
- AMP Effectiveness Audit
- Unique Challenges



Program Status

- Renewed licenses for 71 units at 41 sites
- Reviewing applications for 13 units at 9 sites
- Letters of intent to pursue license renewal submitted by all remaining sites except one
- 9 units have entered the renewed period



Program Status

- Revision 2 to Generic Aging Lessons Learned (GALL) Report published in December 2010
- Update to Generic Environmental Impact Statement (GEIS) for license renewal planned for 2012
- For more information:
 - <http://www.nrc.gov/reactors/operating/licensing/renewal.html>



Public Interest

- High level of public interest in license renewal
- 5 of the 9 applications under review are in various stages of the adjudicatory hearing process
- Often see greater participation in public meetings related to license renewal compared to other meetings held near plant sites
- Over 1,000 comments received on license renewal GEIS
- Petition for rulemaking related to license renewal under review

“Hot Topics” –

Buried and Underground Piping and Tanks

- Issued new AMP XI.M41 in GALL Report Rev 2, which is focused on:
 - Preventive Actions: cathodic protection, coatings, backfill quality
 - Augmented inspection quantities based on meeting or not meeting preventive measures
 - Included inspections of underground piping and tanks



“Hot Topics” –

Buried and Underground Piping and Tanks

- Plan to issue Interim Staff Guidance in 2012 to address plants without cathodic protection and inspection quantities based on:
 - Soil sampling for corrosivity
 - Plant-specific operating experience related to leaks, backfill quality, and coating integrity



“Hot Topics” – Selective Leaching



Example of selective leaching. Photo not taken from STP.

“Hot Topics” – Selective Leaching at STP

- Aluminum bronze selective leaching occurring in components at South Texas Project
- Large amount of susceptible piping
- Long-term degradation has occurred in different configurations
- Current licensing basis approach
 - Pre-engineered analysis that meets Generic Letter 90-05 and ASME Code
 - Allows operation to the next outage



“Hot Topics” – Selective Leaching at STP

- License renewal approach – program must manage aging through 60 years of operation, not simply the next outage
- As a result, staff considerations include:
 - Full extent of all degradation occurrences versus a summary of plant-specific OpE
 - How does the applicant identify degradation in buried piping?
 - Does applicant know the rate of subsurface degradation?
 - What internal inspections will occur to confirm the rate of degradation through the renewal period?
 - Do the structural analyses include projected subsurface degradation surrounding the site of the breach of the pressure boundary through the end of the renewal period?

“Hot Topics” – Inaccessible non-EQ Cables



“Hot Topics” – Inaccessible non-EQ Cables

- Updated XI.E3 in GALL Report Rev 2
 - “Inaccessible Power Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements”
- Expanded scope to include cables ≥ 400 volts and non-energized cables
- Changed inspection and testing frequencies
 - 1-yr frequency for inspections
 - 6-yr frequency for testing
 - Added event-driven inspections
 - Heavy rain
 - Flooding

Operating Experience

- GALL Report is essentially a convenient collection of OpE
- GALL Report describes AMPs for “nominal” OpE
- NRC expects AMPs to be modified based on plant-specific and industry OpE
 - Will be reviewed in Inspection Procedure 71003, “Post-Approval Site Inspection for License Renewal”

Operating Experience

- Only 9 of 104 units have entered the extended period
 - Much more to be learned on aging management
 - Incorporation of OpE **essential** if subsequent renewal is to be considered a viable option
- RIS 11-05 should be entered into corrective actions programs for evaluation
 - “Information on Revision 2 to The Generic Aging Lessons Learned Report For License Renewal of Nuclear Power Plants”

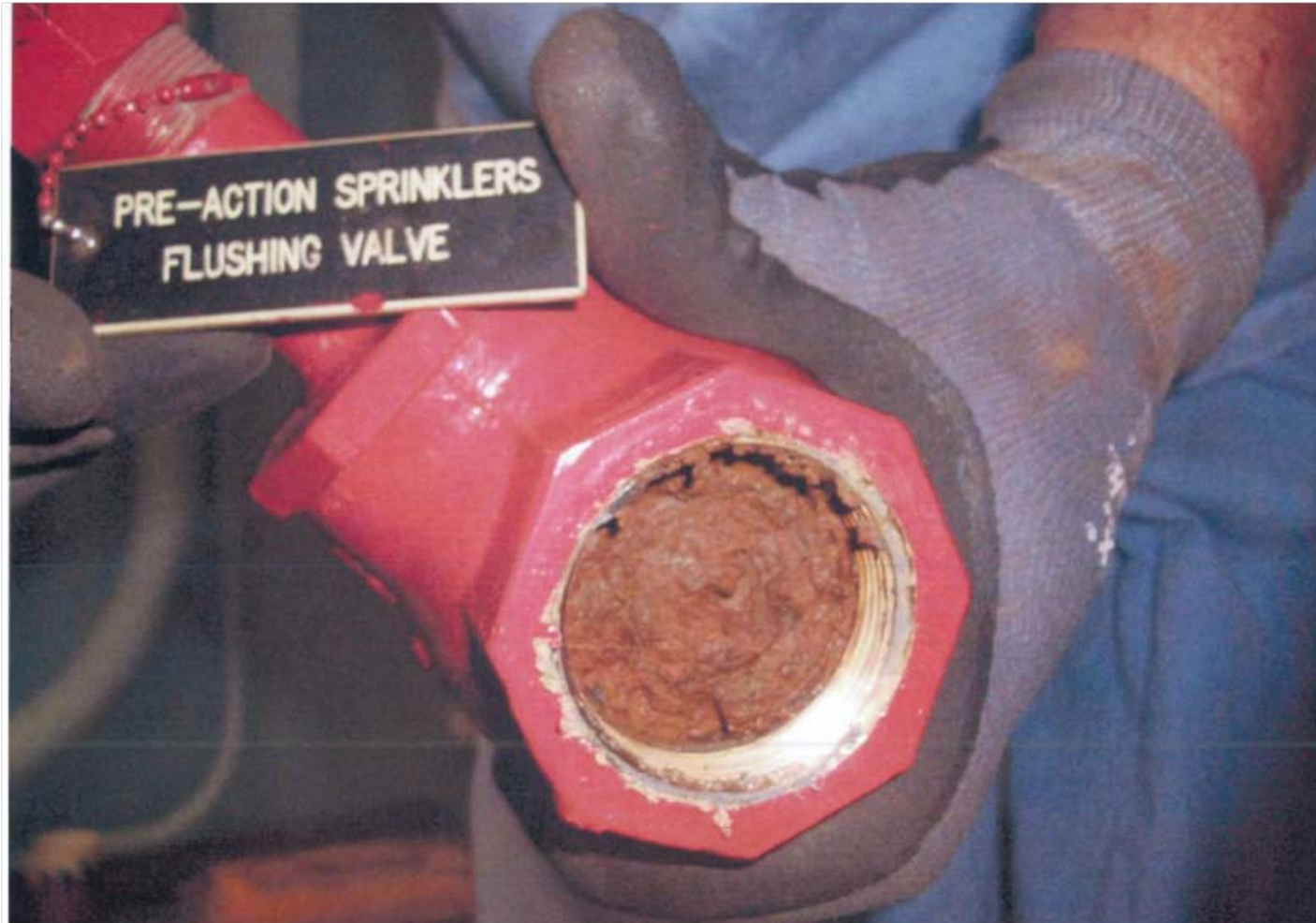
Operating Experience

- Draft Interim Staff Guidance (ISG) published in *Federal Register* on August 24, 2011 (76 FR 52995)
 - “Ongoing Review of Operating Experience”
 - Provides guidance and clarification concerning the ongoing review of plant-specific and industry-wide operating experience as an attribute of AMPs
 - Provide your comments at www.regulations.gov by searching under Docket ID NRC-2011-0191

Operating Experience

- Other ISGs in development
 - Wall thinning mechanisms other than flow-accelerated corrosion
 - AMP for steam generators
 - Aging management of stainless steel structures and components in treated borated water
- Fukushima and earthquake near North Anna
 - AMPs will need to be evaluated based on final agency actions and lessons learned

Operating Experience – AMPs at Work



Ginna AMP Effectiveness Audit

- August 2011: Division of License Renewal staff worked with staff from NRC's Office of Research to conduct an AMP effectiveness audit at Ginna
- Purpose: To gather information related to the effectiveness of AMPs and to learn what licensees are finding through AMP implementation
- Scope: Sample review of the AMP implementation results and licensee's assessment of the AMPs



Ginna AMP Effectiveness Audit

- Related assessments underway:
 - DOE/EPRI/Constellation Nuclear Plant Life Extension Demonstration Project
 - At NMP from March 20 to April 20, 2011, to examine representative BWR parameters
 - At Ginna from April 24 to May 26, 2011, to examine representative PWR parameters



Ginna AMP Effectiveness Audit

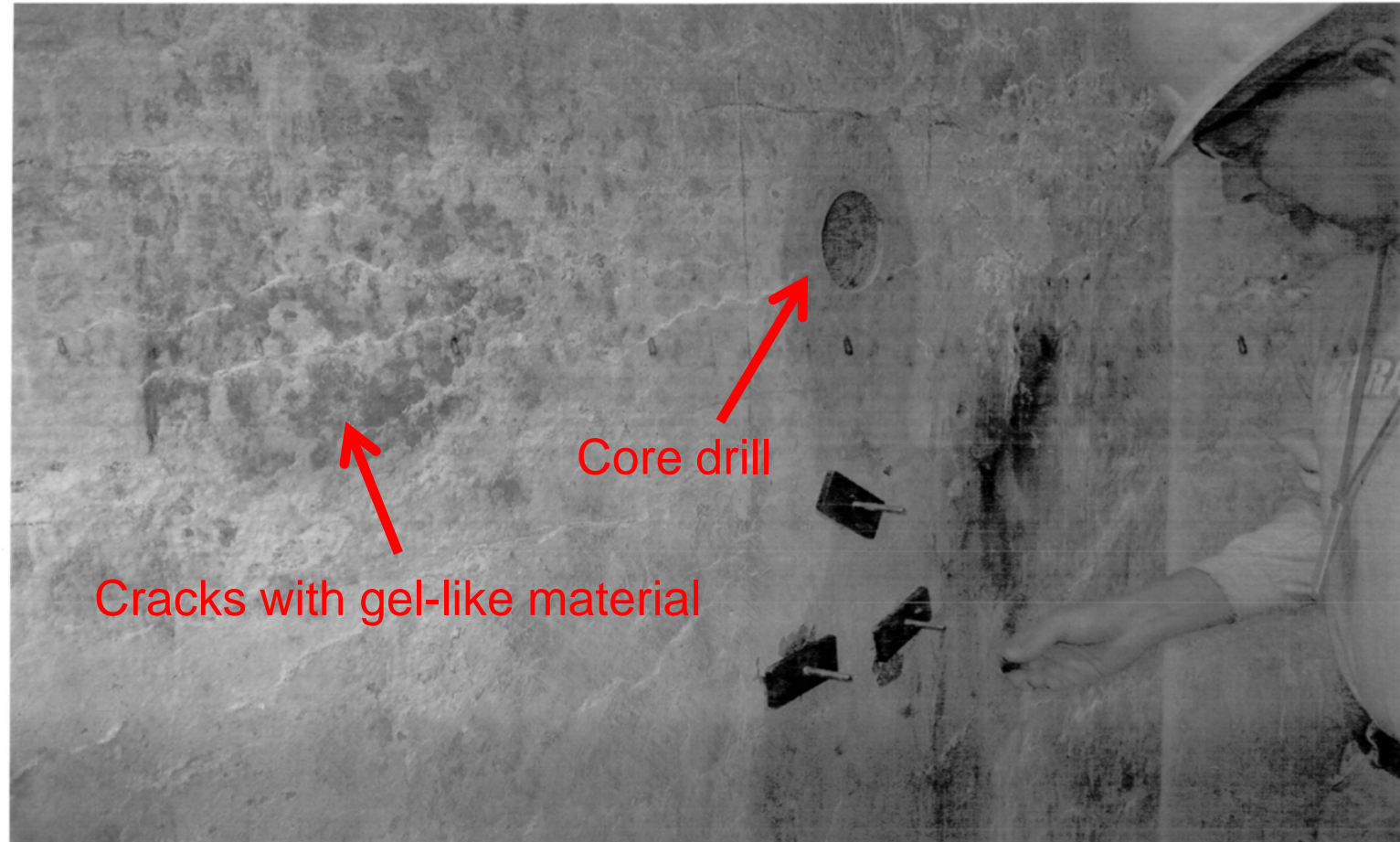
- First systematic approach to gathering the results of inspections and monitoring that licensees have committed to perform in support of initial license renewal
 - In particular, results of one-time inspections to verify the absence, rate, extent, etc., of aging effects
- This type of OpE will be important to inform regulatory decisions and to determine areas in which additional research is needed

Ginna AMP Effectiveness Audit

- Audit results currently under review
- Audit report to be issued in November or December
- Similar audits to be planned at other sites
- Are AMPs evolving in response to OpE?



Unique Challenges – Concrete alkali silica reaction (ASR)

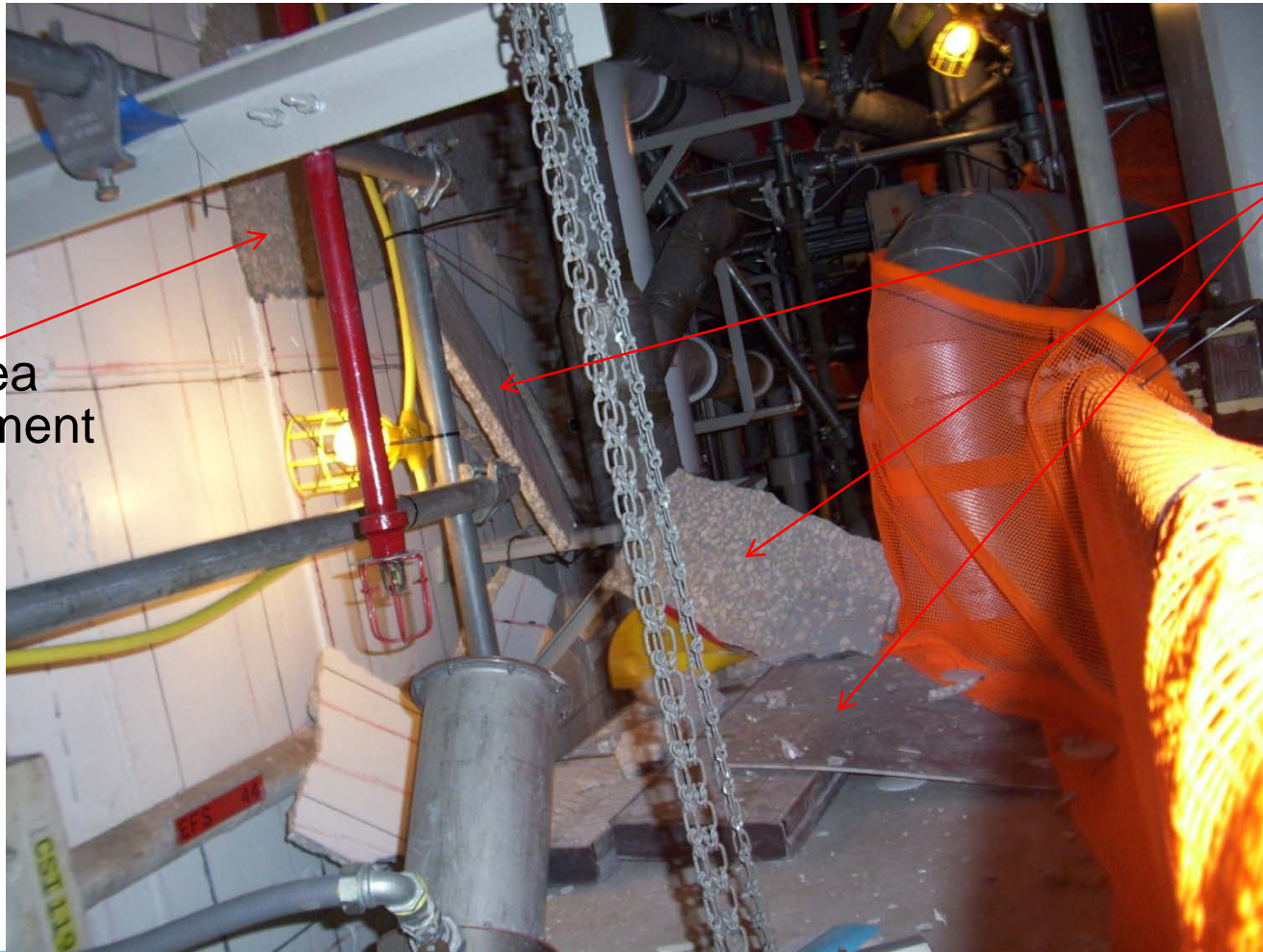


Unique Challenges – Concrete alkali silica reaction (ASR)



Example of ASR. Photo not taken at Seabrook.

Unique Challenges – Crystal River Containment



Spalled Area
of Containment

Fallen
Concrete

Unique Challenges

- Another unique challenge: Crystal River containment damage and repair
 - Cannot proceed with license renewal decision until acceptable containment AMP agreed upon
- What if these issues did not come up during the license renewal review?
 - Would the actions required to correct the operability concerns be reviewed to see if they affect the corresponding AMPs?
- Message: Licensees need to account for changes made to meet Part 50 requirements that can affect AMPs and their bases